

REMARKS

Claims 1-21 are pending in the application and are presented for reconsideration and further examination in view of the foregoing amendments and following remarks.

In the outstanding Office Action claims 1-13 was objected to; claims 1-13 were rejected under 35 U.S.C. § 112, 2nd paragraph as indefinite; claims 1-10, and 12-13 were rejected under 35 U.S.C. § 103(a) as obvious over U.S. Patent No. 6,204,209 to Rozek et al. in view of U.S. Patent No. 3,935,353 to Doerfling et al.; and claims 1 and 11 were rejected under 35 U.S.C. § 103(a) as obvious over U.S. Patent No. 4,957,797 to Maeda et al. and the Doerfling et al. '353 patent in view of U.S. Patent No. 4,581,432 to Blum et al.

By this Response and Amendment claims 1-13 are amended to obviate their objections in accordance with the Examiner's suggestions; claims 1, 2, 5-7, 9 and 12 are amended to obviate the indefiniteness rejections; claims 1, 7, 12 and 13 are amended to clarify the invention; claims 14-21 are added to claim further features of the invention; and the prior art rejections are traversed and arguments in support thereof are provided.

Independent claim 12 has been rewritten in independent form and now explicitly claims the corresponding limitations of independent claim 1. Claim 13 has been rewritten to include a limitation previously found in originally submitted claim 12. Newly submitted claims 14-18 claim limitations previously found in

originally submitted claim 12. Newly submitted claims 19-21 claim the narrow range limitations originally claimed in conjunction with broader range limitations of claims 2, 5, and 9, respectively.

It is therefore respectfully submitted that the above amendments introduce no new matter within the meaning of 35 U.S.C. § 132.

Claim Objections

The Examiner objected to claims 1-13 due to informalities.

RESPONSE

Applicants thank the Examiner for the suggested corrections.

Claims 1-13 have been amended, as suggested by the Examiner, to replace the term "characterized in that" with --wherein--, or --comprising--, as applicable; to correct typographical errors in the superscripts of claim 2; to change the term "PU" to --polyurethane--; and to change the term "PE" to --polyethylene--.

Accordingly, reconsideration and withdrawal of the objections is respectfully requested.

Rejections Under 35 U.S.C. § 112, 2nd Paragraph

Claims 1-13 were rejected due to errors of antecedent basis in claim 1; for ambiguities in claims 6-7; for nested range limitations in claims 2 and 5; and for use of the terms

"especially..." and "for example..." in claim 12.

RESPONSE

Claims 1-13 have been amended to obviate the rejections. As amended the rejections are respectfully traversed.

The claims have been amended to correct errors of antecedent basis including those noted by the Examiner. Claim 6 has been amended to delete the language "chemically-bonded" and now claims that the cellulose and polyester fibres are bonded together. Claim 7 has been amended to delete the language "accordingly to achieve the required wetting properties". In lieu thereof claim 7 now claims that the barrier layer is treated --or wetted so that said treated or wetted surface can enter into adhesion with said adhesive--. Claims 2, 5, and 9 have been amended to delete narrow range limitations from within broader range limitations; and newly submitted claims 19-21 have been added to claim the narrower range limitations. Finally, claim 12 has been amended to delete the terms "especially..." and "for example"; and the corresponding "especially" preferred embodiments of the claimed structure/method have been claimed in newly submitted claims 15-18.

Rejection under 35 U.S.C. § 103

The Examiner rejected claims 1-13 as obvious over U.S. Patent No. 6,204,209 to Rozek et al. in view of U.S. Patent No. 3,935,353

to Doerfling et al.; and claims 1 and 11 as obvious over U.S. Patent No. 4,957,797 to Maeda et al. and the Doerfling et al. '353 patent in view of U.S. Patent No. 4,581,432 to Blum et al.

RESPONSE

Applicants respectfully traverse the rejections.

To establish a *prima facie* case of obviousness, the Examiner must establish: (1) that some suggestion or motivation to modify the references exists; (2) a reasonable expectation of success; and (3) that the prior art references teach or suggest all the claim limitations. Amgen, Inc. v. Chugai Pharm. Co., 18 USPQ2d 1016, 1023 (Fed. Cir. 1991); In re Fine, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988); In re Wilson, 165 USPQ 494, 496 (C.C.P.A. 1970).

Applicants traverse the rejections because all three prongs for a *prima facie* case of obviousness have not been established for each of the rejections. Specifically, all the claim limitations are not present in the cited references.

The present invention, as claimed in independent claims 1 and 12, is directed to a lining for a vehicle roof, and the method for constructing same. As claimed in claims 1 and 12 the rooflining has an air-permeable support layer with an air-permeable first reinforcement layer on a vehicle roof side thereof and an air-permeable second reinforcement layer on a passenger compartment side thereof. An air-impermeable back layer is disposed on a

vehicle roof side of the first reinforcement layer. That is, on a side opposite the support layer. An air-permeable decorative layer is disposed on a passenger compartment side of the second reinforcement layer. That is, on a side opposite the support layer. The back, first reinforcement, support, second reinforcement, and decorative layers are bonded to each other with an air-permeable adhesive. A semi-permeable and migration-resistant barrier layer is provided between the second reinforcement layer and the decorative layer.

1. Rejections based on Rozek et al. / Doerfling et al. patents.

The Examiner alleges that the Rozek et al. patent's decorative cover layer 22 corresponds to Applicants' air impermeable back layer; and alleges that the Rozek et al. patent's third reinforcing layer 16 corresponds to Applicants' air permeable decorative layer. Applicants respectfully disagree.

Applicants' respectfully submit that the Examiner has attempted to turn the Rozek et al. patent's disclosed structure upside down in an attempt to allege a structure corresponding to the presently claimed invention. However, the Examiner has failed to recognize that the positional orientation of the structure, of both Rozek et al. patent and the instant application, are features which are essential to the device's functionality. Applicants respectfully submit that the Examiner's proposal would render the

prior art unsatisfactory for its intended purpose; and would moreover change the principle of operation of the reference.

THE PROPOSED MODIFICATION CANNOT RENDER THE PRIOR ART UNSATISFACTORY FOR ITS INTENDED PURPOSE. If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984)

THE PROPOSED MODIFICATION CANNOT CHANGE THE PRINCIPLE OF OPERATION OF A REFERENCE. If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959). (MPEP 2143.01)

The Rozek et al. patent discloses a laminarily constructed vehicle headliner. As disclosed in the Rozek et al. patent at col. 6, lines 1-2, decorative cover sheet (22) **...covers the front side (the underside or passenger compartment side)** of fibrous reinforcing layer 20 With reference to the Rozek et al. patent's Figs. 1-2, a release layer 24 is on a side of the composite headliner opposite that of decorative layer 22. As further disclosed in the Rozek et al. patent at col. 6, lines 17-25, "[r]elease layer 24 is preferably a **porous** cloth scrim.

Release layer 24 is adhesively secured to fibrous reinforcing mat 16. Release layer 24 prevents sticking of laminate 10 to the thermoforming molding tool surface during the thermoforming operation. After the thermosetable resin has cured in the molding tool, a contoured laminate 20 (shown in FIG. 2) is easily removed from the thermoforming molding tool. **The porosity of layer 24 is not critical since it will be on the top side (upper or roof side) of the product.**

Applicants' respectfully submit that the Rozek et al. patent's decorative cover (22) cannot correspond to Applicants' claimed air-impermeable back layer, as suggested by the Examiner, because Applicants' back layer is on a vehicle roof side of the composite laminar structure whereas the Rozek et al. patent specifically discloses that cover sheet is on a passenger compartment side of the composite laminar structure.

Moreover, as disclosed in the instant application at page 3, lines 11-13, modern legal regulations concerning the design of vehicle linings forbid a direct air flow between the vehicle roof and the passenger compartment. In view of these requirements, and as further disclosed at page 6, lines 20-25, "[a]n air impermeable back layer (9), preferably in polyethylene, is provided on the vehicle roof side. The back layer 9 prevents air from being able to flow from the passenger compartment through the air permeable lining 1 into the space between the vehicle roof 2 and the lining

1.”

Applicants respectfully submit that although the Rozek et al. patent's release layer 24 is positioned on a vehicle roof side of the laminate structure in a corresponding position to that of Applicants' claimed back layer, the Rozek et al. patent's release layer cannot be equated with Applicants' claimed back layer. The Rozek et al. patent not only does **NOT** disclose that the release layer (back layer) is air-impermeable, as claimed in claims 1 and 12, but in fact **teaches away** for the claimed air-impermeability by disclosing that layer 24 is a "porous scrim", the porosity of which "is not critical" because it is on the "top side (upper or roof side)".

In view of the above, Applicants respectfully submit that the Examiner's reliance on the Rozek et al. patent are misplaced. Moreover, Applicants respectfully submit that even assuming arguendo that the Doerfling et al. patent discloses all that the Examiner asserts that it discloses, the combination of the Rozek et al. and Doerfling et al. patents would not result in the presently claimed invention. Claims 1 and 12 are therefore asserted to be patentable over the cited references. Claims 2-10, dependent from claim 1; and claim 13, dependent from claim 12, are asserted to be patentable over the cited references for at least the same reasons that claims 1 and 12 are patentable thereover.

Accordingly, reconsideration and withdrawal of the rejections

is respectfully requested.

2. Rejections based on Maeda et al. / Doerfling et al. and Blum et al. patents.

The Examiner alleges that the Maeda et al. patent's damping layer 11 corresponds to Applicants' air impermeable back layer. Applicants respectfully disagree.

The Maeda et al. patent discloses a laminarily constructed vehicle headliner having, in succession, a damping layer 11 on a vehicle roof side, a covering layer 6, a reinforcing layer 5, a support layer 2, a covering layer 3, and a decorative layer 4.

As disclosed in the Maeda et al. patent at col. 2, lines 44-47, [o]n the upper surface of the base member 1 which faces the roof panel P, there is disposed a vibration-damping layer 11 for dampening vibrations tending to bend the roof panel P.

Von Nostrand's Scientific Encyclopedia, 6th ed (© 1983) defines damping as a progressive reduction or suppression of the oscillation of a system. Damping therefore refers to a property of energy loss from a system. Damping force is resistive, it opposes motion. Under the principle of conservation of energy and the first law of thermodynamics, the change in internal energy of a system is equal to the heat added to the system minus the work done by the system. See e.g., Wylen and Sonntag Fundamentals of Classical Thermodynamics, 3rd ed (© 1986). In accordance with the first law of thermodynamics, free vibrations (oscillations) of a

mechanical element die away over time by conversion of the kinetic energy of the vibrations into radiant energy, and/or transference of the kinetic energy from the oscillating body to its surroundings. Thus, "vibration-damping" refers to a property of energy loss from an oscillating element of a system through transference of the kinetic energy associated with the mechanical vibrations of the oscillating element into heat and/or by the work done.

As further disclosed in the Maeda et al. patent at col. 3, lines 49-51, "[t]he vibration-damping layer 11 is made of an **air-permeable**, highly vibration-damping material such as asphalt-impregnated urethane foam or the like."

As disclosed in the instant application at page 3, lines 11-13, modern legal regulations concerning the design of vehicle linings forbid a direct air flow between the vehicle roof and the passenger compartment. In view of these requirements, and as further disclosed at page 6, lines 20-25, "[a]n air impermeable back layer (9), preferably in polyethylene, is provided on the vehicle roof side. The back layer 9 prevents air from being able to flow from the passenger compartment through the air permeable lining 1 into the space between the vehicle roof 2 and the lining 1."

Applicants respectfully submit that the Maeda et al. patent's vibration damping layer 11 cannot be equated with Applicants'

claimed back layer. The Maeda et al. patent not only does **NOT** disclose that the vibration damping layer (back layer) is air-**impermeable**, as claimed in claim 1, but in fact teaches away for the claimed air-**impermeability** by disclosing that the vibration damping layer is air-permeable.

In view of the above, Applicants respectfully submit that the Examiner's reliance on the maeda et al. patent is misplaced. Moreover, in view of the above, Applicants respectfully submit that even assuming arguendo that the Doerfling et al. and Blum et al. patents discloses all that the Examiner asserts that they discloses, the combination of the Maeda et al., Doerfling et al., and Blum et al. patents would not result in the presently claimed invention. Claim 1 is therefore asserted to be patentable over the cited references. Claim 11, dependent from claim 1 is asserted to be patentable over the cited references for at least the same reasons that claim 1 is patentable thereover.

Accordingly, reconsideration and withdrawal of the rejections is respectfully requested.

Newly Submitted Claims

Newly submitted claims 14-18, dependent from claim 12, are asserted to be patentable over the cited prior art for at least the same reasons that claim 12 is asserted to be patentable thereover.

Newly submitted claims 19-21, dependent from claim 1, are asserted to be patentable over the cited prior art for at least the

same reasons that claim 1 is asserted to be patentable thereover.

MISCELLANEOUS

The references cited by the Examiner have been reviewed and it is agreed that the design claim as originally presented and as herein resubmitted are patentable thereover.

CONCLUSION


In light of the foregoing, Applicant submits that the application is in condition for allowance. If the Examiner believes the application is not in condition for allowance, Applicant respectfully requests that the Examiner contact the undersigned attorney if it is believed that such contact will expedite the prosecution of the application.

Respectfully submitted,

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Attachment "A"
(Pending Claims)

1. (Currently Amended) Lining for a vehicle roof (2) with:
an air-permeable support layer (3), ~~which support layer (3)~~
has

an ~~first~~ air-permeable first reinforcement layer (4) on ~~the~~
a vehicle roof side of said support layer, and an ~~second~~ air-
permeable second reinforcement layer (5) on ~~the~~ a passenger
compartment side of said support layer, ~~the first reinforcement~~
~~layer on the vehicle roof side having~~

an air-impermeable back layer (9) on a vehicle roof side of
said first reinforcement layer being opposite said support layer,
~~the second reinforcement layer (5) being provided with~~

an air-permeable decorative layer (6) on ~~a~~ the passenger
compartment side of said second reinforcement layer being
opposite said support layer, and

the ~~individual~~ back, first reinforcement, support, second
reinforcement, and decorative layers being bonded to each other
with an air-permeable adhesive (7), ~~characterised in that~~

and further comprising to make an acoustically optimisable
~~and aesthetically-resistant vehicle rooflining~~, a semi-permeable
and migration-resistant barrier layer (8) ~~is~~ provided between the
second reinforcement layer (5) and the decorative layer (6) to
make an acoustically optimisable and aesthetically-resistant

vehicle rooflining.

2. (Currently Amended) Lining according to claim 1,
~~characterised in that~~ wherein the layers on the passenger
compartment side have an air flow resistance of $500\text{Nsm}^{-3} < R1 <$
 ~~2500Nsm^{-3} . $500\text{Nsm}^{-3} < R1 < 2500\text{Nsm}^{-3}$, especially $900\text{Nsm}^{-3} < R1 <$~~
 ~~1900Nsm^{-3} .~~

3. (Currently Amended) Lining according to claim 1,
~~characterised in that~~ wherein the air-permeable support layer (3)
is made from a ~~PU~~ polyurethane foam.

4. (Currently Amended) Lining according to claim 1,
~~characterised in that~~ wherein the first reinforcement layer (4)
comprises a glass fibre layer.

5. (Currently Amended) Lining according to claim 1,
~~characterised in that~~ wherein the barrier layer (8) ~~consists of~~
comprises a mixed fibre fabric, weighing approximately 20 g/m^2 to
 60 g/m^2 and ~~especially a mixed fibre fabric weighing~~
~~approximately 45 g/m^2 .~~

6. (Currently Amended) Lining according to Claim 5,
~~characterised in that~~ wherein the barrier layer (8) comprises

~~contains chemically bonded~~ cellulose and polyester fibres bonded together.

7. (Currently Amended) Lining according to Claim 6,
~~characterised in that wherein the~~ a surface of the barrier layer
is treated ~~accordingly to achieve the required wetting properties~~
or wetted so that said treated or wetted surface can enter into
adhesion with said adhesive.

8. (Currently Amended) Lining according to Claim ~~1~~ 3,
~~characterised in that wherein the~~ barrier layer (8) is migration-
resistant to softeners, decomposition products used by ageing and
/ or additives from a ~~PU~~ polyurethane foam layer or ~~the~~ adhesive
films.

9. (Currently Amended) Lining according to Claim 1,
~~characterised in that wherein the~~ barrier layer (8) has a
thickness of 0.2 mm to 1.0 mm, ~~especially 0.285 mm.~~

10. (Currently Amended) Lining according to Claim 1,
~~characterised in that wherein the~~ adhesive (7) is a conventional
two-pack ~~PU~~ polyurethane adhesive.

11. (Currently Amended) Lining according to Claim 1,

~~characterised in that~~ wherein the decorative layer (6) is an air-permeable ~~PE~~ polyethylene non-woven fabric layer.

12. (Currently Amended) Method for making a vehicle rooflining with:

an air-permeable support layer (3),

an air-permeable first reinforcement layer (4) on a vehicle roof side of said support layer, and an air-permeable second reinforcement layer (5) on a passenger compartment side of said support layer,

an air-impermeable back layer (9) on a vehicle roof side of said first reinforcement layer being opposite said support layer,

an air-permeable decorative layer (6) on a passenger compartment side of said second reinforcement layer being opposite said support layer, and

the back, first reinforcement, support, second reinforcement, and decorative layers being bonded to each other with an air-permeable adhesive (7),

and further comprising a semi-permeable and migration-resistant barrier layer (8) provided between the second reinforcement layer (5) and the decorative layer (6) to make an acoustically optimisable and aesthetically-resistant vehicle rooflining, said method according to Claim 1, characterised in that comprising:

providing an ~~An~~ air-impermeable back layer (9);

covering said back layer ~~is covered~~ with first reinforcement fibres (11); ~~especially glass fibres, and~~

applying a support layer (3), ~~especially a PU foam layer, is~~
~~applied~~ to the reinforcement fibres (11);

impregnating the ~~The~~ back layer (9), reinforcement fibres (11) and support layer (3) ~~are impregnated~~ jointly with a pre-determined quantity of a first component (12) of an adhesive (7) ~~and to do this, are transported~~ by transporting the back layer, reinforcement fibres and support layer together through a bath (13) filled with this first component (12) and then squeezing through first squeezing rollers (14) disposed downline from the bath, ~~for example;~~

~~The support layer (3) impregnated in this way is covered~~
covering the thus impregnated support layer on a side thereof
opposite the back layer with second reinforcement fibres (15); ~~especially glass fibres, and then wetted, especially sprayed,~~

wetting the second reinforcement fibres with a second component (16) of the adhesive (7);

applying a ~~A~~ semi-permeable and migration-resistant barrier layer (8) ~~is applied~~ to the second reinforcement fibres (15) and is then ~~pressed~~ pressing with the other layers ~~(9, 11, 3, 15)~~ with ~~the aid of~~ second squeezing rollers (17), ~~for example,~~ in order to allow the two adhesive components (12, 16) to react with

each other, ~~before~~ and thereafter applying a self-adhesive
decorative layer (6) ~~is applied to the~~ this barrier layer (8);
~~The layers applied to each other in this way are then cut to size~~
~~as required and hot shaped.~~

13. (Currently Amended) ~~Lining according to Claim 1,~~
~~characterised in that the barrier layer (8) is migration-~~
~~resistant to softeners, decomposition products used by ageing and~~
~~/ or additives from a PU foam layer or adhesive films~~ The method
according to claim 12 further comprising cutting to size and hot
shaping.

14. (Added) The method according to claim 12 wherein said
decorative layer is self adhesive.

15. (Added) The method according to claim 12 wherein said
first reinforcement fibres comprise glass fibres.

16. (Added) The method according to claim 12 wherein said
support layer comprises a polyurethane foam layer.

17. (Added) The method according to claim 12 wherein said
second reinforcement fibres comprise glass fibres.

18. (Added) The method according to claim 12 wherein said step of wetting comprises spraying.

19. (Added) Lining according to claim 2, wherein the layers on the passenger compartment side have an air flow resistance of $900 \text{ Nms}^{-3} < R1 < 1900 \text{ Nsm}^{-3}$.

20. (Added) Lining according to claim 5, wherein the barrier layer (8) comprises a mixed fibre fabric, weighing approximately 45 g/m^2 .

21. (Added) Lining according to Claim 9, wherein the barrier layer (8) has a thickness of 0.285 mm .